GNE3130R1C2

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Ashkenazi et al.	) Group Art Unit 1724
Appl. No.	:	10/066,273	)
Filed	:	February 1, 2002	)
For	:	SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME	)
Examiner	:	OLGA N. CHERNYSHEV	)

DECLARATION OF MARY GERRITSEN, Ph.D. UNDER 37 C.F.R. § 1.132

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

I, Mary Gerritsen, Ph.D. declare and state that:

1. I am a co-inventor of the invention described in U.S. Patent Application Serial No. 10/066,273 entitled SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME.

2. My scientific Curriculum Vitae, including my list of publications, is attached to and forms part of this Declaration (Exhibit A).

3. From 1997-2001 I worked for Genentech as a Senior Scientist in the Department of Cardiovascular Research. During this time I directed and analyzed various bioassays and numerous molecular biology techniques including microarray analyses. In 2002, I accepted a position as Senior Director of Vascular Biology and Functional Genomics at Millennium Pharmaceuticals. Currently I am employed as the Senior Director of Molecular Pharmacology at Exelixis. These positions have provided me with extensive experience in vascular research, including angiogenesis and cancer development.

4. I am familiar with the specification and claims of U.S. Patent Application Serial No. 10/066,273, both the outstanding Office Action mailed September 17, 2004 and the first Office Action mailed April 28, 2004, and the issues raised therein.

5. The specification of U.S. Patent Application Serial No. 10/066,273 describes Assay 93 in Example 60. Assay 93 was performed to determine whether particular compounds are capable of inducing c-fos expression in pericyte cells. As stated in Example 60, the novel polypeptide PRO444 tested positive in this assay. The results and significance of Assay 93 are described in more detail herein in an effort to provide the U.S. Patent and Trademark Office (USPTO) with more information regarding the significance of c-fos induction in pericyte cells.

6. Assay 93 is an assay designed to determine whether particular compounds are capable of stimulating retinal perictyes through the c-fos pathway. Retinal pericytes are unique cells that play an important role in regulating angiogenesis. More specifically, pericytes help regulate capillary permeability and stabilize newly formed blood vessels. C-fos is a transcription factor involved in the regulation of cellular growth, including cancer and angiogenesis. Growth factors capable of stimulating pericytes signal through the c-fos pathway.

7. In light of their significant relationship with angiogenesis and cancer, it is useful to identify compounds capable of stimulating pericytes through the c-fos pathway in order to treat, promote and diagnose these conditions. Furthermore, one with skill in the art would reasonably conclude that the presence or overexpression of a compound capable of inducing c-fos expression in pericytes (*e.g.*, PRO444) in a subject would more likely indicate the onset of cancer and/or angiogenesis as opposed to a subject who lacked this polypeptide. Likewise, a skilled artisan would also reasonably conclude that neutralizing compounds capable of stimulating c-fos expression in pericytes (*e.g.*, PRO444) could be useful in preventing the onset and/or progression of cancer and/or angiogenesis.

8. In the outstanding Office Action, the Examiner alleged that with respect to the positive results observed when PRO444 was tested in Assay 93, "one skilled in the art would not attribute the induction of c-fos expression in pericytes by [PRO444] as a physiological reaction specifically induced by [PRO444]." (Office Action, page 3). On the contrary, Assay 93 included both positive and negative test controls: DME + 5% serum +/- PDGF and buffer respectively. The use of these controls ensured that the resulting data were attributed to the specifically tested compounds (*e.g.*, PRO444), as opposed to some other factor or stimulus. Accordingly, a skilled artisan would readily have attributed the detected c-fos induction specifically to the PRO444 polypeptide.

9. In the first Office Action mailed April 28, 2004, the Examiner cited three journal articles: Janknecht et al., *Carcinogenesis*, vol. 16 no. 3, pp. 443-450 (1995), Herrera et al., *Progress in Neurobiology*, vol. 50, pp. 83-107 (1996), and Kovács, *Neurochem Int.* vol. 33, pp. 287-297 (1998) to support the assertion that c-fos induction is a "non-specific first line of cellular response" and that PRO444 accordingly lacks sufficient utility. It is important to note that none of these three articles discuss whether c-fos induction in

pericyte cells is a general response. For example Kovács is directed to c-fos induction in neuronal cells, and Herrera et al. is directed to c-fos expression in brain cells. Accordingly the teachings of these articles regarding c-fos induction are not necessarily applicable to pericytes, the specific cell type tested in Assay 93.

10. In Assay 93, 646 samples representing 382 different compounds were tested for their ability to induce c-fos expression in pericytes. The tested compounds included many known cytokines (*e.g.*, Interleukin-1, tumor necrosis factor, interferon), growth factors (*e.g.*, vascular endothelial growth factor, fibroblast growth factor, epidermal growth factor), chemokines, autocoids (e.g. endothelin), hormones (e.g. glucagons, luteinizing hormone) and polypeptides of unknown function. Of the 646 different samples that were assayed, only 48 tested positive for inducing c-fos expression in pericyte cells. Several of the 48 samples testing positive represented different lots of the same compound. As very few of the tested compounds were able to induce c-fos expression, it can be reasonably concluded from these results that the stimulation of c-fos in pericytes is not a generalized response.

11. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: Jan 15/ 2005

Mary Gerritsen, Ph.D.

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CURRICULUM VITAE
Mary E. Gerritsen, Ph.D.

Residence Address:
541 Parrott Drive
San Mateo Ca 94402
Home phone 650 348 6492
meg570@comcast.net

Education:

1975 Bachelor of Science
University of Calgary
Calgary, Alberta Canada
Summa Cum Laude (Zoology)

1978 Doctor of Philosophy, Endocrinology/Pharmacology.
University of Calgary, Faculty of Medicine.
Calgary, Alberta Canada.

Postdoctoral Training:

1978-1980 Research Pharmacologist, Department of Pharmacology,
University of California, San Diego.

Academic Appointments:

Department of Physiology, New York Medical College

1980-1986 Assistant Professor of Physiology

1986-1989 Associate Professor of Physiology.

1986 Associate Professor of Physiology with Tenure

1990-1996 Adjunct Associate Professor

Pharmaceutical Industry Appointments:

Miles Pharmaceuticals (Renamed Bayer Corporation, April 1995)

1990-1995 Senior Staff Scientist; Institute for Inflammation and Autoimmunity
- Led screening efforts for small molecule inhibitors of leukocyte adhesion inhibitors

- Identified flavonoids as potent inhibitors of cytokine induced gene expression
- Identified first synthetic inhibitors of IKB kinase, BAY 11-7082 and 11-7085.

1990-1992 Group Leader, Leukocyte Immigration.

- Coordinated screening efforts on MMP inhibitors for rheumatoid arthritis. Clinical candidate identified and developed for cancer metastasis
- Championed screen development for p38 MAP kinase. Program initiated and potent compounds identified
- Supervised group of four laboratories, (5 Ph.D.s and 9 Ras)
- Initiated reporter gene and transcription factor screens for inflammation targets
- Identified potent ICAM-1 blocking antibody
- Coordinated development of lipid mediator program. Developed screens for cyclooxygenase I and II inhibitors
- Worked with multidisciplinary teams including chemistry, pharmacokinetics, metabolism, formulation and pre-clinical development on inflammation projects-MMP inhibitors, p38 MAP kinase inhibitors, cytokine inhibitors, leukocyte adhesion inhibitors, cyclooxygenase inhibitors
- Evaluated in-licensing opportunities for small molecules in inflammation, osteoarthritis and osteoporosis

1992-1996 Arbeitskreis Moderator (Similar to Associate Director), Inflammation Research

- Coordination of all research discovery programs in Inflammation involving both internal and external research groups
- Supervised Six Arthritis Laboratories (8 Ph.d.s,16-20 RAs)
- Presentation of research progress at quarterly in house meetings and at annual Bayer-wide meeting (held in Germany). Evaluation of other programs
- Evaluation of various in-licensing opportunities
- Wrote NDA for ketoprofen analog in-licensed by Bayer
- Recruited and built interdisciplinary group in Rheumatoid Arthritis and Chronic Inflammatory Disease
- Researched and wrote strategic plan and competitive assessment

1993-1997 Principal Staff Scientist, Inflammation Research

- Continued to support screening programs for NF-κB inhibitors
- Developed external collaborations with Vascular Research Division at Brigham and Womens Hospital-laboratories of Drs. Francis W. Luscinskas, Michael Gimbrone and Tucker Collins.

- Identified and mapped interaction of the coactivators CBP/p300 with NF-κB
- Led target validation team for Ceramide/Sphingomyelinase in Osteoarthritis

Genentech Inc.

1997- 2001 Senior Scientist, Department of Cardiovascular Research

- Initiated the development of an angiogenesis target discovery program using Curagen™ technology and Affymetrix oligonucleotide arrays
- Coordinated the screening efforts of multiple groups working on various aspects of vascular biology for SPDI (Secreted Protein Discovery Initiative)
- Evaluated various in-licensing opportunities for Cardiovascular Research, Oncology and Immunology
- Coordinated external collaboration with Dr. Alexander Clowes, University of Washington on EGF receptors and restenosis
- Served on preclinical development committee for VEGF-Therapeutic angiogenesis
- Served on Clinical Development committee for CD18 monoclonal antibody
- Identified critical roles for PECAM and VE-Cadherin in endothelial differentiation into tube-like structures
- Identified PPARγ ligands as potent inhibitors of growth factor induced angiogenesis
- Identified critical role of hepatocyte growth factor in endothelial differentiation in vitro and angiogenesis in vivo
- Demonstrated that KDR (VEGF receptor) plays essential role in endothelial cell differentiation into tube like structures
- Identified over 100 novel targets for either promotion or inhibition of angiogenesis
- Identified stanniocalcin as a novel angiogenic modulator
- Used affymetrix oligonucleotide arrays to identify critical angiogenesis progression factors in renal cell carcinoma
- Identified critical roles for matrix metalloproteinases and c-src in capillary lumen formation
- Identified a novel peptide fragment that may be a key player in inflammation and angiogenesis.

2000 Acting Director, Department of Cardiovascular Research

- Coordinated all department efforts in research discovery and preclinical development
- Continued to coordinate angiogenesis target discovery initiative. Discovered several novel molecules with key roles in endothelial differentiation in vitro, angiogenesis in vivo, and regulators of vascular permeability
- Evaluated various in-licensing opportunities
- Worked on Theraupeutic Area Focus committee to define new directions for Cardiovascular Research
- Initiated a Cardiovascular Research Seminar series to bring in outside speakers on a biweekly basis. Coordinated collaborations that resulted from this initiative
- Head, Cardiovascular Recruitment committee. Organized successful search for Senior Scientist level positions.

2000-2001 Associate Director, Department of Cardiovascular Research, Genentech

- Researched and developed strategic plan for Department with Director
- Coordinated projects with internal and external research groups
- Provided scientific support to clinical and marketing groups
- Continued projects initiated above

2002-2003 Senior Director, Departments of Vascular Biology and Functional Genomics

Millennium Pharmaceuticals, Inc. South San Francisco CA

- Served as project leader on three small molecular discovery programs at different stages-hit to lead, late development, high throughput screening
- Supervised vascular biology staff (four senior scientists, two post-doctoral fellows, 6 research associates, associate scientists and research investigators)
- Supervised histology core facility (one scientist and one research associate)
- Supervised functional genomics group at South San Francisco (two scientists at MSF), helped to coordinate activities with Millennium Cambridge facility.
- Developed strategic plan for vascular biology effort at Millennium
- Initiated large scale genomic screening program for targets in atherosclerosis, aortic aneursym, and diabetic vascular disease as well as lung and renal fibrosis

- Initiated collaborations with over 10 academic laboratories in animal model development, human and primate disease models
- Served on pharmacology working group committee to oversee small molecule evaluation in vivo models
- Presented status updates to senior management at Scientific Review Committee meetings on a quarterly basis
- Coordinated MSF efforts in Bayer collaboration-Qualified Target initiative
- Developed and characterized animal models for drug screening programs.
- Worked on a biomarker initiative for each of our screening programs combining genomic analysis and mechanism of action studies.

2004-present Senior Director, Molecular Pharmacology. Exelixis South San Francisco, CA

- Supervise 4 associate directors (total group of 30)
- Direct all cell-based screens and pharmacodynamic studies to support projects in oncology, metabolic disease and inflammation
- Evaluate lead validation and lead optimization programs
- Establish outsourced pharmacology studies to support internal programs
- Identify new molecular targets for New Lead Discovery high through put screens

Projects and Research Areas of Expertise:

Eicosanoid Metabolism and Physiology
Adhesion Molecules
Mechanism of Drug Action
Matrix Metalloproteinases
Cell Based and Molecular Screening
Transcription Factors, Promoter Analysis
Endothelial Cell Biology, General Cell Biology
Vascular Biology
Microcirculation
Angiogenesis
Gene Expression Profiling using Differential Display, Affymetrix Arrays
Rosetta Resolver Software for microarray analysis
Functional Genomics
Rheumatoid Arthritis, Chronic Inflammatory Diseases
Atherosclerosis
Coronary, Peripheral and Cerebral Cardiovascular Disease

Macular Degeneration
Diabetic retinopathy
Models of fibrosis (lung, renal, liver)
Cell based screening for oncology, metabolism and inflammation

Awards and Honors:

Province of Alberta Graduate Scholar 1976
Medical Research Council Studentship 1976-1978
Isaac Walton Killam Scholar and Merit Award 1977,1978
Medical Research Council Fellow 1978-1980
Alexander and Alexandrine Sinsheimer Scholar 1981, 1982
Pharmacia Young Investigator Award, Microcirculatory Society 1983
Mary Weideman Award, Microcirculatory Society 1984
NIH Research Career Development Award 1987-1992
Miles Science Award 1992
Kurt Weiderhelm Award, Microcirculatory Society 1998
Award named after me (Gerritsen Award), awarded annually by the Microcirculatory Society

Major Committee Assignments
National and Regional:

1985-	Ad hoc Grant Reviewer/Site Visitor: Experimental Cardiovascular Sciences Study Section (NIH)
1986-	Ad hoc reviewer VA Intramural Research Program
1987-	Ad hoc reviewer Medical Research Council of Canada, Canadian Heart Foundation, New York State Heart Association
1992-2001	Member, NIH Pathology A Study Section
1989-1992	Council, Microcirculatory Society
1991	Nominations Committee, Microcirculatory Society
1992	Chairperson, Publications Committee, Microcirculatory Society
1992	Liason Committee, American Physiology Society
1993	Steering Committee, North American Vascular Biology Organization

	Convenor, Blood Vessel Club, Anaheim CA
1994	Councillor, North American Vascular Biology Organization
1995	International Advisory Committee, 2nd Asian Microcirculation Meeting,
1996-	Co-Chairman, Keystone Symposia on Oxidant Stress, From Molecules to Man, Santa Fe NM
1997,1998,2001	Program Committee, Vascular Biology '98 and Vascular Biology '99, ATVB meeting 2001
2000	Vascular Biology Study Section, American Heart Association President, North American Vascular Biology Organization Development Committee, North American Vascular Biology Organization International Advisory Committee , World Congress of Microcirculation
2001	Coorganizer, with Richard Hynes and Denisa Wagner of Keystone Conference on Angiogenesis and Chronic Disease
2001	NIH Program Project Site Visit Team, National Cancer Institute
2001	NIH Stroke Progress Review Group
2001	External Scientific Advisory Committee, Institute for Medicine and Engineering, University of Pennsylvania
2002	Organized Career Symposium "Women in Industry" at the Exp. Biol.
2003-present	Development Committee Chair, North American Vascular Biology Organization

New York Medical College:

1980-1989	Member, Graduate Faculty (elected)
1980-1985	Student Life Committee
1980-1989	Safety Committee
1980-1990	Member, Search Committees for Chairmen, Departments of Cardi
1987-1989	Tenure and Promotions Committee

Bayer Corporation:

1992	Co-Chairman, Bayer International Adhesion Meeting, Cologne Germany
1993-	Diversity Committee
1995-1996	Safety Committee

Editorial Boards:

1993-1998	Founding Editor and Editor in Chief, MICROCIRCULATION, the official journal of the Microcirculatory Society
1998-	Consulting Editor, MICROCIRCULATION
1999-	Editorial Board, ENDOTHELIUM, JOURNAL OF ENDOTHELIAL RESEARCH
1992-2000	Editorial Board, AMERICAN JOURNAL OF PHYSIOLOGY (Heart and Circulation)
1989-1995	Associate Editor, MICROVASCULAR RESEARCH
1993-2000	Editor, North American Vascular Biology Organization (NAVBO) Newsletter; Co-editor, NAVBO WWW Home Page
1995-present	Editorial Board, JOURNAL OF CARDIOVASCULAR PATHOLOGY
1996-2000	Editorial Board, CIRCULATION RESEARCH

Memberships in Professional Societies:

American Association for the Advancement of Science
American Horticultural Society
American Physiological Society
American Society for Pharmacology and Experimental Therapeutics
American Society for Research on Vision and Ophthalmology
American Society for Investigational Pathology
The Microcirculatory Society, Inc .
North American Vascular Biology Organization (NAVBO)
American Society for Cell Biology
Society for Leukocyte Biology
Peninsula Orchid Society
American Orchid Society
Pleurothallid Alliance

AHA Council on Arteriosclerosis, Thrombosis and Vascular Biology
Fellow of the American Heart Association
AHA Council on Stroke

Summary of Teaching Experience:

A. Courses

University of Calgary:
Pharmacology
Lecturer, Endocrinology 1977, 1978

University of California, San Diego:
Physiology/Pharmacology
Teaching Assistant and Laboratory Instructor 1979, 1980
(Pharmacokinetics, Metabolism labs)

New York Medical College:
Human Physiology
Lecturer (endocrinology) 1980-1990
Molecular Endocrinology
Course Director and Lecturer 1980-1990
Methods in Endocrinology
Course Director 1986
Cells of the Vessel Wall
Course Director 1986, 1988
Biochemical Pharmacology
Lecturer 1980-present (receptor pharmacology, cell culture, eicosanoid biochemistry, biologicals as drugs)
Review courses (Cardiovascular, Endocrinology) for Medical Boards at Bellvue Hospital, NY and other NY Medical College affiliate hospitals.

Jefferson Medical College:
Graduate Course in Human Physiology
Lecturer 1985-1987 (vascular cell biology, eicosanoid biochemistry)

City College of New York
Human Physiology
Lecturer 1980-1989 (Endocrinology)

University of Virginia
Shaking the Academic Tree: Alternative Careers 1999

B. Research Supervision

Predoctoral research experiences (summers, elective periods): New York Medical College graduate and medical students
Doctoral Research Advisor/Supervisor: New York Medical College Physiology, Pharmacology, Cell Biology
Postdoctoral Supervisor: New York Medical College and Miles/Bayer Corporation
Postdoctoral Supervisor: Genentech
Summer Intern Advisor, Genentech

Sponsored Research Programs (Principal Investigator)

National Instituties of Health

1981-1984	NIH New Investigator Award "Cerebral Microvessels "
1985-1988	NIH HLBI RO1 Grant "Glucocorticoids and Microvessel Endothelium"
1985-1988	NIH EI RO1 Grant "Retinal Endothelial Cells"
1986-1989	Research Career Development Award (NIH, returned in 1990)
1990-1996	NIH HLBI RO1 grant "Glucocorticoids and Microvessel Endothelium"

Other Agencies

1981-1984	American Heart Association Grant-in-Aid "Isolation and Characterization of Endothelial Cells from Cardiac Muscle"
1984	American Diabetes Association Grant-in-Aid "Effects of High Glucose on Retinal Microvascular Endothelial Cells"
1984-1986	Westchester Heart Association Grant-in-Aid " Effects of High Glucose on Cardiac Muscle Microvessel Endothelial Cells"
1984-1985	New York State Health Research Council Grant-in-Aid "Eicosanoid Metabolism in Cardiac Muscle Microvessel Endothelium"
1986	Boehringer Ingelheim Grant-In-Aid "Isolation of a Leukocyte Regulatory Factor from Microvessel Endothelium"
1990	Miles Inc. Grant in Aid. Fellowship support for Robert Mannix
1989	Fight for Sight Fellowship (sponsor for Julio Rimarachin)
1989	New York Eye and Ear Fellowship (sponsor for Julio Rimarachin)

Consultantships:

1986-1989	INSITE VISION, Alameda California
1986-1989	Boehringer Ingelheim Pharmaceuticals, Ridgefield CT

2001	Department of Vascular Medicine, Stanford CA
2003-2004	Frazier HealthCare Ventures, Palo Alto, CA
2003	Xoma Corporation, Berkeley, CA
2004-	Macusight, Freemont, CA

Students and fellows supervised and their current positions:

1981-1985	Terry O Meyers, Ph.D. Associate Professor of Physiology, City University of New York
1985-1987	Robert Gundel, Ph.D. Vice President, Pre-clinical Research, Xoma Corporation
1984-1988	Anthony Capetandes, Ph.D. Scientist, Merck
1981-1983, 1987	Richard Rosenbaum, M.D. Fellow, Department of Cardiology, Jefferson Medical College,Philadelphia
1986-1989	Catherine Partridge, Ph.D.Associate Professor, Department of Biochemistry, Albany Medical College
1986-1989	Julio A. Rimarachin,M.D. Associate Professor, Cornell University Medical College
1985-1989	Robert Mannix,Ph.D. Research Cell Biologist, Children's Hospital, Harvard University
1988-1993	Tariq Moatter, Ph.D. Assistant Professor, Aga Khan University, Karachi Pakistan
1993-1999	Eric Schwartz, Ph.D. Post-doctoral fellow, Stanford University
1998	Jennifer Graham, Orthopedics resident, Brigham and Women's Hospital
1998-2000	Xiaohua Xin, Scientist, Eli Lilly
1999-present	Hainsworth Shin, Post-doctoral fellow, UCSD
2000-present	Max Tejada, Post-doctoral fellow, Genentech

Bibliography

Original Research Reports

1. **Gerritsen, M.E.** and Lederis K. Effects of urotensin I on intracellular levels of cAMP in the rat tail artery. Eur. J. Pharmacol. 60:211-219, 1979.

2. **Gerritsen, M.E.** and Lederis, K. Effects of urotensin I on the isolated rat tail artery. Pharmacology. 18:72-79, 1979.

3. **Gerritsen, M.E.**, Parks, T.P., Printz, M.P. Prostaglandin endoperoxide metabolism in bovine cerebral microvessels. Biochim. Biophys. Acta 619:196-206, 1980.

4. **Gerritsen, M.E.** and Printz, M.P. Prostaglandin E_2 synthesis in pigeon aorta: comparison of atherosclerosis-resistant (show racer) and atherosclerosis-prone (white carneau) pigeon breeds. Artery 8:56-62, 1980.

5. **Gerritsen, M.E.** and Printz, M.P. Sites of prostaglandin synthesis in the bovine heart and isolation of coronary microvessels. Circ. Res. 49:1159-1171, 1981.

6. **Gerritsen, M.E.** and Printz, M.P. PGD synthase in microvessels from the rat cerebral cortex. Prostaglandins 22:553-557, 1981.

7. **Gerritsen, M.E.**, Morgan, D.O.M., Parks, T.P., Printz, M.P. and Lederis, K. A proposed role for prostaglandins in the modulation of the relaxation response to urotensin I in isolated rat arteries. Prostaglandins 22:873-892, 1981.

8. **Gerritsen, M.E.** PGD_2 formation in the vasculature. Characteristics of rat tail vein PGH-PGD isomerase. Prostaglandins 25:105-120, 1983.

9. **Gerritsen, M.E.** and Cheli, C.D. Arachidonic acid and prostaglandin endoperoxide metabolism in isolated rabbit coronary microvessels and isolated cultivated coronary microvessel endothelial cells. J. Clin. Invest. 72:1658-1671, 1983.

10. Rodrigues, A.M. and **Gerritsen, M.E.** Release of 6-keto $PGF_{1\alpha}$ and PGE_2 from isolated rabbit cerebral microvessels: effects of 100% O_2 room air and 95% N_2 5% CO_2. Stroke 15:717-722, 1984.

11. Levine, N., Tarlin, N. and **Gerritsen, M.E.** Effect of castration on prostaglandin mediated changes in membrane potential and prostaglandin synthesis in guinea pig seminal vesicles. J. Reprod. Fertil. 73:539-545, 1985.

12. Myers, T.O.M., Messina, E.J., Rodrigues, A.M. and **Gerritsen, M.E.** Altered prostaglandin synthesis in the cremaster muscle and aorta from streptozotocin-induced diabetic rats. Am. J. Physiol. 249:E374-379, 1985.

13. **Gerritsen, M.E.** and Burke, T. Insulin binding and effects of insulin on glucose metabolism and 2-deoxyglucose uptake in isolated rabbit coronary microvessel endothelial cells. Proc. Soc. Exp. Biol Med. 180:17-23, 1985.

14. Rosenbaum, R. and **Gerritsen, M.E.** Effects of dexamethasone on rabbit coronary microvessel endothelial (RCME) cell prostaglandin synthesis. Am. J. Physiol. 250:C970-977, 1986.

15. Allen, L.A. and **Gerritsen, M.E.** Regulation of hexose transport in cultured bovine retinal microvessel endothelium by insulin. Exp. Eye Res. 43:679-686, 1986.

16. **Gerritsen, M.E.**, Weinstein, B.I., Gordon, G.G. and Southren, A.L. Prostaglandin synthesis and release from cultured human trabecular meshwork cells and scleral fibroblasts. Exp Eye Res. 43:1089-1102, 1987.

17. **Gerritsen, M.E.**, Ngnalene, D.M. and Rodrigues, A.M. Calcium ionophore (A23187) and arachidonic acid stimulated prostaglandin release from microvascular endothelial cells: effects of calcium antagonists and calmodulin inhibitors. J. Pharm. Exp. Ther. 240:837-846, 1987.

18. Belloni, F.L., Liang, B.C. and **Gerritsen, M.E.** Effects of alkylxanthines and calcium antagonists on adenosine uptake by cultured rabbit coronary microvessel endothelium Pharmacol. 35:1-15, 1985.

19. Churchill, L., Buasback, H., **Gerritsen, M.E.** and Ward, P.E. Metabolism of opoid peptides by cerebral microvasculature aminopeptidase. Biochim. Biophys. Acta 923:35-41, 1987.

20. **Gerritsen, M.E.** Eicosanoid production by the coronary microvascular endothelium. Fed. Proc. 46:47-53, 1987.

21. **Gerritsen, M.E.** Functional heterogeneity of vascular endothelium. Biochemical Pharmacology. 36:2701-2711, 1987.

22. Gundel, R.H., **Gerritsen, M.E.**, Gleich, G.J. and Wegner, C.D. Repeated antigen inhalation results in a prolonged airway eosinophilia and airway hyperresponsiveness in primates. J. Appl. Physiol 68:779-786, 1990.

23. **Gerritsen, M.E.**, Burke, T. and Allen, L. Glucose starvation is required for insulin stimulation of hexose uptake and metabolism in coronary microvascular endothelial cells. Microvascular Research 35:153-166, 1988.

24. Gundel, R.H., **Gerritsen, M.E.**, and Wegner, C.D. Antigen coated sepharose beads induce airway eosinophilia and airway hyperresponsiveness in cynomologous monkeys. Am. J. Resp. Dis. 140:629-633, 1989.

25. Medow, M.E., Intrieri, L., Moatter, T. and **Gerritsen, M.E.** Dexamethasone effects on membrane lipid composition of microvascular endothelial cells. Am. J. Physiol. 257:C512-519, 1989.

26. Partridge, C.A., **Gerritsen, M.E.**, Southren, A.L. and Weinstein, B.I. Dexamethasone induces specific proteins in human trabecular meshwork cells. Invest. Ophthalmol. Vis. Sci. 30:1843-1847, 1989.

27. **Gerritsen, M.E.**, Rimarachin, J., Perry, C.A. and Weinstein, B.I. Arachidonic acid metabolism by cultured bovine corneal endothelial cells. Invest. Ophthalmol. Vis. Sci. 30:698-705, 1989.

28. **Gerritsen, M.E.**, Perry, C.A. Moatter, T. Cragoe, E.J.jr and Medow, M.S. Role of Na^+ /H^+ antiport in agonist specific prostaglandin release from microvessel endothelium. Am. J. Physiol. 256:C831-839, 1989.

29. Partridge, C.A. and **Gerritsen, M.E.** Dexamethasone increases the release of three 44 kD proteins immunologically related to plasminogen activator-inhibitor-1 from HUVE and RCME cells. Thromb. Res. 57:139-154, 1990.

30. Capetandes, A. and **Gerritsen, M.E.** Simplified methods for the selective and consistent culture of bovine retinal endothelial cells and pericytes. Invest. Ophthalmol. Vis. Sci. 31:1738-1744, 1990.

31. **Gerritsen, M.E.** and Perry, C.A. Regulation of eicosanoid synthesis in microvessel endothelium: glucocorticoids do not effect arachidonoyl CoA synthase activity. Biochim. Biophys. Acta 1045:174-179, 1990.

32. Masferrer, J.L., Rimarachin, J.A., **Gerritsen, M.E.**, Falck, J.R., Yadagiri, P., Dunn, M.W. and Lanaido-Schwartzman, M.. 12 (R) hydroxyeicosatrienoic acid, a potent chemotactic and angiogenic factor produced by the cornea. Exp. Eye Res. 52:417-424, 1991.

33. **Gerritsen, M.E.**, Schwarz, S.M., and Medow, M.S. Glucocorticoid-mediated alterations in fluidity of rabbit cardiac muscle microvessel endothelial cell membranes: Influences on eicosanoid release. Biochim. Biophys. Acta 1065:63-68, 1991.

34. Koller A., Sayedi, N, **Gerritsen, M.E.** and Kaley G. EDRF release from microvascular endothelial cells dilates arterioles *in vivo*. Am. J. Physiol. 261:H128-H133, 1991.

35. Moatter T and **Gerritsen, M.E.** Fibroblast growth factor upregulates PGG/H synthase in rabbit microvascular endothelial cells by a glucocorticoid independent mechanism. J. Cell. Physiol. 151:571-578, 1992.

36. Gundel, R.H., **Gerritsen, M.E.**, and Wegner, C.D. Polymyxin B-induced bronchial neutrophilia does not alter airway responsiveness to methacholine in cynomologous monkeys. Clin. Exp. Allergy 22:357-363, 1992.

37. Carley, W.W., Niedbala, M.J. and **Gerritsen, M.E.** Isolation and partial characterization of human lung microvessel endothelial cells. Am. J. Resp. Cell. Mol. Biol. 7:620-630. 1992.

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Patents: Issued or Published.
(note that there I have over 900 patent applications pending; for the sake of brevity a few representative ones are listed)

WO0104311 Secreted and Transmembrane Polypeptides and Nucleic Acids

WO9914234 PROMOTION OR INHIBITION OF ANGIOGENESIS AND CARDIOVASCULARIZATION

WO0030628 METHOD OF INHIBITING ANGIOGENESIS

WO0103720 CARDIOVASCULAR USES FOR GLITTER/GITR

WO0125433 ANGIOGENESIS MODULATING GENES

WO0032776 SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME

WO0053756 SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME

WO0073454 SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME

WO0053757 PROMOTION OR INHIBITION OF ANGIOGENESIS AND CARDIOVASCULARIZATION

WO0073445 PROMOTION OR INHIBITION OF ANGIOGENESIS AND CARDIOVASCULARIZATION

WO0077037 SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME

WO0116318 SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME

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